IN THE DRAWINGS:

Please cancel Figure 4.

Please also enter the replacement sheet of drawings (Figures 3(a) to 3(c)) that is attached to this Amendment After Final Rejection.

REMARKS

The Office Action of April 21, 2010 has been received and its contents carefully noted. An RCE is being filed concurrently to permit further prosecution.

Revisions to the Application:

The present Amendment After Final Rejection cancels Figure 4 and replaces Figures 3(a) - 3(c) with the version of these drawings that was originally submitted on July 12, 2005. It also revises the specification to remove reference to dummy gate arrangement 9 and to otherwise respond to the new matter objection. The changes to the specification essentially restore the revised passages to their earlier form. In view of these revisions, it is respectfully submitted that the objection in section 2 of the Office Action should be withdrawn.

The Rejection on the Prior Art:

The Office Action rejects all of the pending claims for obviousness based on US patents to Liau et al, Gabriel et al, and Lee et al (hereafter simply "Liau," Gabriel," and "Lee" for short), with evidence provided by another US patent. For the reasons discussed below, however, it is respectfully submitted that the inventions defined by independent claims 3 and 15 are patentable over these references.

The Office Action takes the position that much of what is recited in claim 3 is disclosed by Liau. Claim 3 is reproduced below, with emphasis added:

> 3. (previously presented) A dry etching method for a semiconductor device, comprising:
> providing a polysilicon layer formed on a silicon substrate;

implanting a first region of the polysilicon layer with N type ions and a second region of the polysilicon layer with P type ions, a further region of the polysilicon layer being left as a non-doped region;

simultaneously gate-etching an N type polysilicon gate electrode from the first region, a P type polysilicon gate electrode from the second region, and a non-doped polysilicon dummy gate arrangement from the non-doped region of the polysilicon layer during a two-stage etching process;

wherein the N type polysilicon gate electrode has an area that is smaller than the area of the first region of the polysilicon layer and the P type polysilicon gate electrode has an area that is smaller than the area of the second region of the polysilicon layer,

wherein **the non-doped polysilicon dummy gate arrangement has an area that is larger than the total area occupied by the N type polysilicon gate electrode and the P type polysilicon gate electrode**, and

wherein an end point detection of one of the stages of the etching process is based on the etching of the non-doped polysilicon dummy gate arrangement.

The Office Action acknowledged that Liau does not disclose that gate electrodes and an undoped polysilicon body are simultaneously etched during an etching process that includes at least one etching stage in which end point detection is based on the etching of the non-doped polysilicon body, or that the non-doped polysilicon body occupies an area that is smaller than the total area occupied by an N type polysilicon gate electrode and a P type polysilicon gate electrode. The Office Action takes the position, though, that these features would have been obvious from the other references.

In particular, the Office Action asserts that Gabriel teaches simultaneously gate-etching a P type polysilicon gate electrode, an N type polysilicon gate electrode, and a non-doped polysilicon body. The Office Action refers to Gabriel's Figure 5A, but what is shown in Figure 5A would result in only one doped gate electrode. More importantly, the doped portion 540 in Gabriel's Figure 5A is not etched when the unimplanted portions 560a and 560 b are etched. As the reference states at column 7, lines 5-9, "the gate etch will see only unimplanted polysilicon, all portions will signal endpoint at about

the same time, and a strong and consistent endpoint signal will be induced and detected." In contrast to Gabriel, claim 3 provides that regions implanted with N type ions and P type ions are etched simultaneously with a non-doped region (note that the first "wherein" clause of claim 3 provides that the N type polysilicon gate electrode has an area that is smaller than the region implanted with N type ions, and the same for the P type polysilicon gate electrode, so portions of the N-doped and P-doped regions are necessarily etched along with the non-doped region). Gabriel **teaches against** etching doped and non-doped polysilicon at the same time. Accordingly, it is respectfully submitted that Gabriel would not have motivated an ordinarily skilled person to modify Liau the manner proposed in the Office Action.

On page 5, the Office Action asserts that Lu teaches that the gate length/channel length of a transistor formed using an undoped portion of polysilicon in the gate is proportional to the breakdown voltage and holding voltage parameter of the device and the gate width/channel width of the transistor using the undoped portion of polysilicon in the gate is proportional to the current carrying capacity of the device. The Office Action then takes the position that changing the size of the undoped portion therefore constitutes an optimization of ranges. However, an ordinarily skilled person would not have thought that optimizing the breakdown voltage, the holding voltage, and the current carrying capacity has anything to do with end point detection during etching. If an ordinarily skilled person optimized these parameters, he would have had no reason to think that he had also achieved improved end point detection. Moreover, there is no reason to think that optimizing the breakdown voltage, the holding voltage, and the current carrying capacity would result in a non-doped polysilicon dummy gate arrangement that "has an

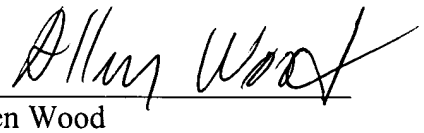
area that is larger than the total area occupied by the N type polysilicon gate electrode and the P type polysilicon gate electrode" as recited in claim 3.

Accordingly, the rejection of claim 3 should be withdrawn. For similar reasons, the rejection of independent claim 15 should also be withdrawn. And since the remaining claims are dependent claims that are automatically patentable along with their independent claims, the rejection of the remaining claims should likewise be withdrawn.

Conclusion:

For the foregoing reasons, it is respectfully submitted that this application is in condition for allowance. Reconsideration of the application is therefore respectfully requested.

Respectfully submitted,



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